A COMPARISON OF PHYSIOLOGICAL AND BIOCHEMICAL PARAMETERS IN FULLY CONSCIOUS HORMEL-HANFORD AND YUCATAN STRAINS OF MINIATURE PIG

George J. Ikeda, PhD,* Theodore C. Michel, BS, Dennis W. Gaines, MS, Vira L. Olivito, Philip P. Sapienza, BS, Leonard Friedman, PhD, Curtis N. Barton, PhD, and Michael W. O’Donnell, MS

U.S. Food and Drug Administration
Center for Food Safety and Applied Nutrition
Beltsville Research Facility
8501 Muirkirk Road
Laurel, Maryland 20708

1. INTRODUCTION

The Yucatan miniature pig was introduced to FDA’s Beltsville Research Facility in the early 1980s. We were impressed by the docile, calm temperament of this strain of miniature pig. The existing strain of miniature pig at our facility was a cross between the Hormel and Hanford strains, bred to be a uniform, compact sized animal with a known pedigree. Because of similarities in the cardiovascular systems of humans and swine, swine often are used in cardiovascular risk assessment studies. The objective of these experiments was to determine whether the docile, calm temperament of the Yucatan miniature pig would make this strain more useful or advantageous than our resident strain in the study of cardiovascular responses to cardioactive agents, particularly while the animals were conscious and restrained. These experiments were designed to measure a spectrum of physiological and biochemical responses to restraint, intravenous intervention and cardioactive agent administration in groups of both Hormel-Hanford and Yucatan miniature pigs.

* Reprint requests to G.J. Ikeda, U.S. Food and Drug Administration, HFS-506, Beltsville Research Facility, 8501 Muirkirk Rd, Laurel, MD 20708 (301) 594-1516.

Advances in Swine in Biomedical Research, edited by Tumbleson and Schook
Figure 1. Arterial blood pressure, Hormel strain.

Figure 2. Arterial blood pressure, Yucatan strain.